WE CLAIM:

1.   A beverage dispensing system comprising:

a beverage dispenser for forming and dispensing a beverage, said beverage dispenser operating under various parameters including a first parameter that is indicative of the quality of the beverage to be dispensed and a second parameter that is indicative as to when routine maintenance is to be scheduled; and

a processor monitoring the various parameters under which said beverage dispenser operates, said processor determining whether the first parameter is outside of a predetermined range and if the first parameter is outside the predetermined range, said processor sends a signal regarding a request for immediate repair service.

2.   The beverage dispensing system according to claim 1, wherein said processor is integrated with said beverage dispenser.

3.   The beverage dispensing system according to claim 1, wherein said processor constantly monitors the first parameter and periodically monitors the second parameter.

4.   The beverage dispensing system according to claim 1, wherein said beverage dispenser comprises a carbonator in which water is mixed with CO_2 gas to form carbonated water and said processor monitors at least one of the water temperature, the water flow rate and the CO_2 gas pressure as the first parameter.

5.   The beverage dispensing system according to claim 1, wherein said beverage dispenser comprises a carbonator in which water pumped by a pump is mixed with CO_2 gas to form carbonated water and said processor monitors at least one of the water pressure, the pump flow rate and actual pump usage as the second parameter.

- 18 -

6.   The beverage dispensing system according to claim 1, further comprising a central processing station remote from said beverage dispenser and communicating with said processor.

7.   The beverage dispensing system according to claim 6, wherein said central processing station dispatches a repairperson to said beverage dispenser when said processor requests immediate repair service.

8.   The beverage dispensing system according to claim 6, wherein said central processing station processes data regarding the second parameter sent from said processor in order to schedule the routine maintenance.

9.   The beverage dispensing system according to claim 6, wherein said processor sends the signal regarding the request for immediate repair service to said central processing station immediately upon determining that the first parameter is outside of the predetermined range.

10.   The beverage dispensing system according to claim 6, wherein said processor sends data relating to the second parameter to said central service center at periodic intervals.

11.   The beverage dispensing system according to claim 1, wherein said processor is provided remote from said beverage dispenser.

12.   The beverage dispensing system according to claim 1, wherein said processor is programmable and the first and second parameters to be monitored can be changed.

13.   The beverage dispensing system according to claim 1, wherein said processor can control components of said beverage dispenser based on monitored parameters.

14. A beverage dispensing method comprising the steps of:

forming and dispensing a beverage with a beverage dispenser, the beverage dispenser operating under various parameters including a first parameter that is indicative of the quality of the beverage to be dispensed and a second parameter that is indicative as to when routine maintenance is to be scheduled;

monitoring the various parameters under which the beverage dispenser operates;

determining whether the first parameter is outside of a predetermined range; and

sending a signal regarding a request for immediate repair service if the first parameter is outside the predetermined range.

15. The beverage dispensing method according to claim 14, wherein in said monitoring step, the first parameter is constantly monitored and the second parameter is periodically monitored.

16. The beverage dispensing method according to claim 14, wherein the beverage dispenser comprises a carbonator in which water is mixed with CO_2 gas to form carbonated water and in said monitoring step at least one of the water temperature, the water flow rate and the CO_2 gas pressure is monitored as the first parameter.

17. The beverage dispensing method according to claim 14, wherein the beverage dispenser comprises a carbonator in which water pumped by a pump is mixed with CO_2 gas to form carbonated water and in said monitoring step at least one of the water pressure, the pump flow rate and actual pump usage is monitored as the second parameter.

18. The beverage dispensing method according to claim 14, wherein a central processing station dispatches a repairperson to the beverage dispenser when immediate repair service is requested in said signal sending step.

19.   The beverage dispensing method according to claim 14, wherein a central processing station processes data regarding the second parameter in order to schedule the routine maintenance.

20.   The beverage dispensing method according to claim 14, wherein data relating to the second parameter is sent to a central service center at periodic intervals.

21.   The beverage dispensing method according to claim 14, further comprising the step of controlling components of the beverage dispenser based on monitored parameters.

22.   A beverage dispensing network comprising:

a plurality of beverage dispensers for forming and dispensing beverages, each beverage dispenser operating under various parameters including a first parameter that is indicative of the quality of the beverage to be dispensed and a second parameter that is indicative as to when routine maintenance is to be scheduled;

a processor monitoring the various parameters under which at least one of said plurality of beverage dispensers operates, said processor determining whether the first parameter is outside of a predetermined range and if the first parameter is outside the predetermined range, said processor sends a signal regarding a request for immediate repair service; and

a central processing station communicating with said processor and receiving the signal, said central station effecting the immediate repair service.

23.   The beverage dispensing network according to claim 22, wherein said processor is integrated with at least one of said beverage dispensers.

24.   The beverage dispensing network according to claim 22, wherein said processor constantly monitors the first parameter and periodically monitors the second parameter.

25.   The beverage dispensing network according to claim 22, wherein at least one of said beverage dispensers comprises a carbonator in which water is mixed with CO_2 gas to form carbonated water and said processor monitors at least one of the water temperature, the water flow rate and the CO_2 gas pressure as the first parameter.

26.   The beverage dispensing network according to claim 22, wherein at least one of said beverage dispensers comprises a carbonator in which water pumped by a pump is mixed with CO_2 gas to form carbonated water and said processor monitors at least one of the water pressure, the pump flow rate and actual pump usage as the second parameter.

27.   The beverage dispensing network according to claim 22, wherein said central processing station dispatches a repairperson to said beverage dispenser when said processor requests immediate repair service.

28.   The beverage dispensing network according to claim 22, wherein said central processing station processes data regarding the second parameter sent from said processor in order to schedule the routine maintenance.

29.   The beverage dispensing network according to claim 22, wherein said processor sends the signal regarding the request for immediate repair service to said central processing station immediately upon determining that the first parameter is outside of the predetermined range.

30.   The beverage dispensing network according to claim 22, wherein said processor sends data relating to the second parameter to said central service center at periodic intervals.

31.   The beverage dispensing network system according to claim 22, wherein said processor is provided remote from said beverage dispensers.

32.   The beverage dispensing network according to claim 22, wherein said processor is programmable and the first and second parameters to be monitored can be changed.

33.   The beverage dispensing network according to claim 22, wherein said processor can control components of said beverage dispensers based on monitored parameters.

34.   The beverage dispensing network according to claim 22, wherein information is transmitted from said processor to said central processing station in a parameter definition file, the parameter definition file being scalable to accommodate parameters of different sizes.

35.   The beverage dispensing network according to claim 34, wherein each parameter definition file includes an ID identifying the dispenser from among said plurality of dispensers with which the accompanying parameters are associated.

36.   A beverage dispensing apparatus, comprising:
    - a carbonator;
    a water supply providing water to said carbonator;
    - a temperature gauge measuring the temperature of the water supplied to said carbonator;
    a CO_2 supply providing CO_2 under a pressure to said carbonator;

- 23 -

a pressure gauge measuring the pressure of the CO_2 supplied to said carbonator; and

a controller communicating with said temperature gauge and said pressure gauge and controlling said CO_2 supply,

wherein said carbonator mixes the water and the CO_2 to form carbonated water and said controller adjusts the pressure of the CO_2 supplied to said carbonator based on the measured CO_2 pressure and water temperature.

37.   A beverage dispensing apparatus according to Claim 36, further comprising:

a first flow sensor that detects a flow rate of concentrate provided by a concentrate pump; and

a second flow sensor that detects a flow rate of the carbonated water provided from said carbonator,

wherein said controller adjusts the flow rate of the concentrate and the flow rate of the carbonated water to maintain a predetermined ratio of concentrate and carbonated water which are mixed to form the beverage that is dispensed from said apparatus.

38.   A beverage dispensing apparatus according to Claim 37, further comprising:

a third flow sensor that detects a flow rate of the water provided to said carbonator,

wherein said controller detects a fault when the water flow rate drops below a predetermined level.

39.   A beverage dispensing apparatus according to Claim 38, wherein said first, second, and third flow sensors are turbine-type flow sensors that utilize a hall effect to detect the flow rate of the concentrate, carbonated water, and water, respectively.

- 24 -

40.   A beverage dispensing apparatus according to Claim 37, further comprising:

a first valve for controlling the concentrate flow rate;

a second valve for controlling the carbonated water flow rate; and

a third valve for controlling the CO_2 pressure,

wherein said controller controls said first, second, and third valves to adjust the concentrate flow rate, the carbonated water flow rate, and the carbon-dioxide pressure, respectively.

41.   A beverage dispensing apparatus according to Claim 40, wherein said first, second, and third valves are pulsing solenoid valves,

wherein said first and second valves operate at a pressure of about 80 psi, and

wherein said third valve operates at a midrange pressure of about 150 psi.

42.   A beverage dispensing apparatus according to Claim 37, wherein said controller detects a low quality beverage when at least one of the concentrate flow rate, the carbonated water flow rate, the water temperature, and the CO_2 pressure is outside of predetermined limits.

43.   A beverage dispensing apparatus according to Claim 42, wherein said controller emits a signal requesting immediate repair service if the low quality beverage is detected.